

Attorney Docket No. 80045.US
U.S.S.N. 10/712,512

REMARKS

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

Claims 1-19 are currently before the Examiner.

Claims 1-19 stand rejected under 35 U.S.C. 112, second paragraph as being indefinite. Specifically the Office Action states that the terms "strong acid monomers" and "weak acid monomers" do not clearly describe what applicant regards as the invention. The Office Action further states that claims 4 and 5 support that applicant intends that "strong acid monomers" are not acids in every instance, but may also be salts, esters and anhydrides as well. The rejection is respectfully traversed.

In response, applicants state that "weak acid monomer" is clearly described in the specification at page 8, lines 25 to 27, with specific examples given at page 8, line 29 to page 9, line 2. In addition "strong acid monomer" is clearly described in the specification at page 9, lines 12 to 14, with specific examples, given at page 9, line 16 to page 10, line 4. These descriptions include salts and certain esters and anhydrides. Therefore, the meaning of "weak acid monomer" and "strong acid monomer," as used in the claims, is readily and clearly apparent from the descriptive portion of the specification.

Claims 1-3, 5-9 and 11-12 stand rejected under 35 U.S.C. 102(b) as anticipated by or Desor *et al.*, U.S. Patent No. 6,005,042. The rejection is respectfully traversed.

In response, applicant states that Desor *et al.* discloses a polymer dispersion prepared by stepwise emulsion polymerization. In the first polymerization stage, Desor *et al.* teaches from 50 to 68.5 wt% "soft" monomer (glass transition temperature (T_g) of below 0°C) and 30 to 50 wt% "hard" monomer (T_g about 65°C). In the second polymerization stage Desor *et al.* teaches from 5 to 45 wt% soft monomer and from 65 to 95% hard monomer. Therefore, in the stepwise

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U.S.S.N. 10/712,512

emulsion polymerization Desor *et al.* requires a "soft polymerization stage" followed by a "hard polymerization stage."

The present application teaches and claims a polymer prepared by the a stage polymerization process having the opposite stage arrangement of Desor *et al.* The present application teaches and claims a first stage polymerization of "hard" monomers (Tg of at least 50°C) and a second stage polymerization of "soft" monomers (Tg about -30 to about 10°C). The emulsion polymer process of the present invention requires a "hard polymerization stag" followed by a "soft polymerization stage."

To further distinguish the present invention, utilizing Tg calculation methods known in the art (Fox equation) and disclosed in the present specification at page 12, Applicants calculate the Tg of the first polymerization stage of Desor *et al.* to be less 30°C in all claimed scenarios. The present application discloses and claims a first stage Tg of our first stage is at least 50°C. Therefore, Desor *et al.* does not teach or suggest the aqueous dispersion made by the process of the present application.

Claims 1-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Desor *et al.* in view of Gray *et al.* U.S. Patent No. 6,875,834. The rejection is respectfully traversed.

Specifically the office action states that the present application differs from Desor *et al.* in that the reference does not include the specific strong acid monomers of applicant's claim and it would have been obvious to include an acidic monomer, such as phosphoethyl methacrylate, as taught by Grey *et al.* in the monomeric compositions of Desor *et al.* to achieve enhanced durability.

In response, applicants refer to the above discussion and state that the teaching of Gray *et al.* does not cure the deficiency of the opposite stage arrangement of the present application when compared to that taught by Desor *et al.* The combination does not teach or suggest a polymer prepared by a first hard polymerization stage, followed by a second soft polymerization

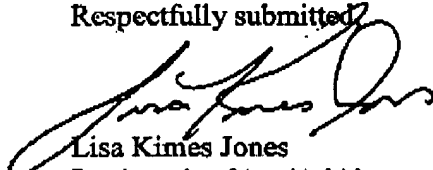
Attorney Docket No. 80045.US
U.S.S.N. 10/712,512.

stage, or the favorable balance of film properties, with minimal VOC levels, in the resulting coatings or films.

In light of the above remarks, it is respectfully submitted that the pending claims of the present application are in condition for allowance.

If it would be of assistance with this application, the Examiner is invited to contact the undersigned.

Respectfully submitted,



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